Measurement ranges of the LCX series

Question:

I can not find any information concerning the measurement ranges for L and C in the datasheet of the LCX series.

Can you please tell me e.g. where I find this information e.g. for Capacitors? Which is the lowest and the highest value I can acquire with my LCR meter?

Answer:

All the specifications for the LCX series are based on Z / PHI / R(DC) as these are the base values to calculate all the other measurement results.

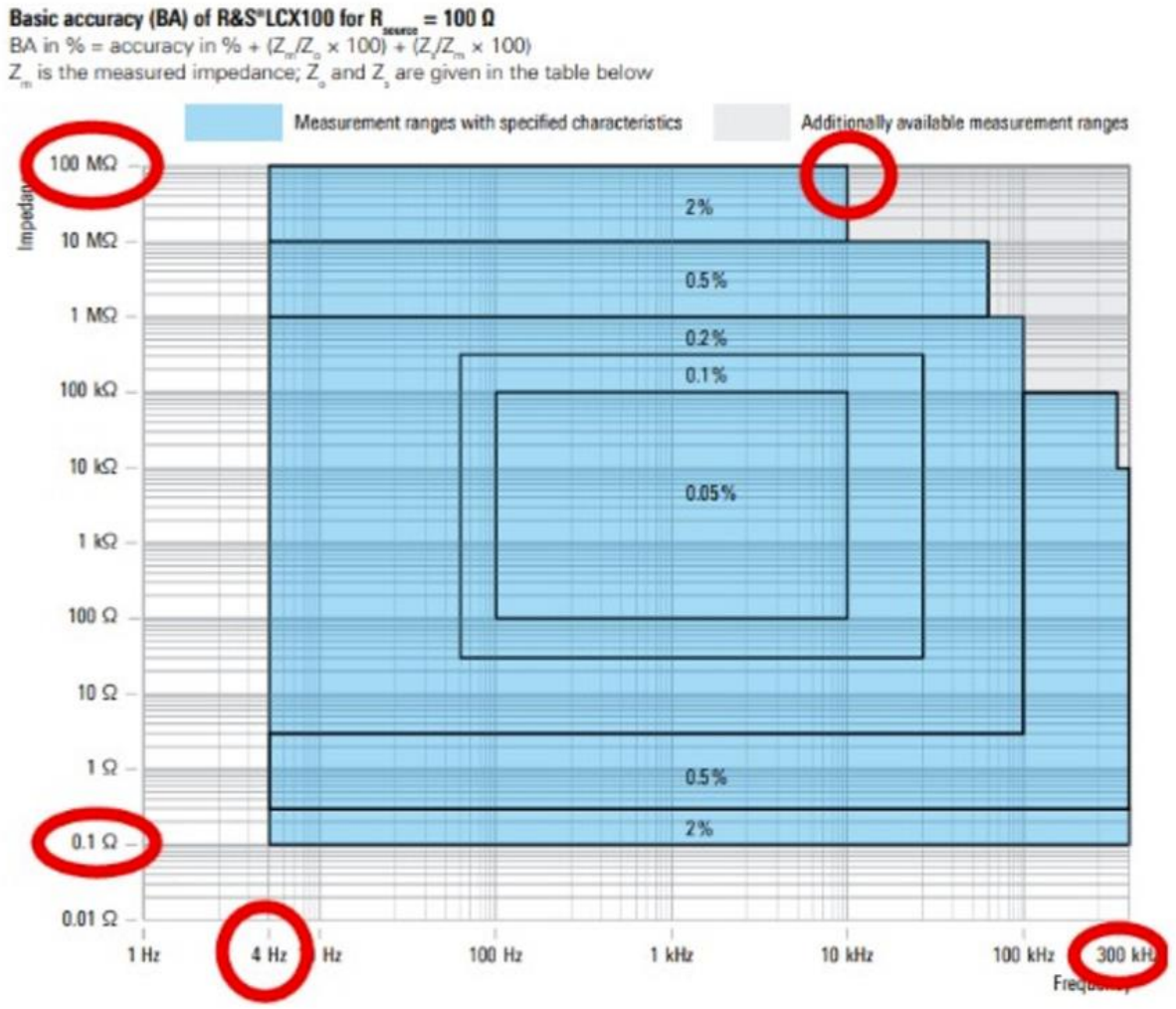
The datasheet provides detailed information.

The range for capacitance measurements can be calculated using Z max and Z min in combination with the frequency range.

The calculation is based on the known formula Z = 1 / (2 * PI * f * C).

We have to transform it to C = 1 /(2 * PI * f * Z)

Using an LCX100 the datasheet (V1.0) provides the following ranges:



We calculate

Z = 100 m Ohm / f = 4 Hz --> C = 297 mF

(Z = 100 m Ohm / f = 300 kHz --> C = 5.3 µF)

(Z = 100 MOhm / f = 4 Hz --> C = 390 pF)

Z = 100 MOhm / f = 10 kHz --> C = 0. 15 pF (Frequency range reduced in specifications)

So the specified capacitance measurement range for the LCX is between 0.15 pF and 297 mF.